at the surface of contact a third potential, means to establish in said electrode a voltage substantially in excess of the voltage in the film at the coacting electrode portion, and means to vary the voltage of said electrode.

5. An amplifier for oscillating current, comprising a film of conducting material and and an output circuit including a source of potential connected across said film, an electrode operating in conjunction with said film intermediate the point of application of the potential thereto to provide an element of uni-directional conductivity thereat, means to maintain said electrode at a voltage substantially in excess of the voltage prevailing at the coacting portion of said conducting film, and an input circuit connected with the said electrode and the negative end of the said film.

6. An amplifier for oscillating current, comprising two insulating members, an intermediate strip of aluminum foil, conducting terminals carried by said insulation members upon either side of the said foil retained thereby, a film of copper sulphur compound extending over said conducting terminals and the edge of the said aluminum strip, output connections to said conducting terminals for applying a potential across the same, and a connection to the said aluminum strip to maintain the same at a higher potential than that prevailing in the film at its portion opposite the aluminum strip.

7. An amplifier for oscillating current, comprising two insulating members, an intermediate strip of aluminum foil, conducting terminals carried by said insulation members upon either side of the said foil retained thereby and in close proximity thereto, a film of copper sulphur compound extending over said conducting terminals and the edge of the said aluminum strip, output connections to said conducting terminals for applying a potential across the same, and a connection to the said aluminum strip to maintain the same at a higher potential than that prevailing in the film at its portion opposite the aluminum strip.

8. An amplifier for oscillating current, comprising a glass block fractured transversely, a strip of aluminum foil retained in the fracture of said block with an edge substantially flush with the corresponding surface of the block, copper terminal coatings carried by the glass block upon opposite sides of said foil and out of contact therewith, a film of copper sulphur compound extending over the surface of said copper terminals and the aluminum edge, output connections to the said copper terminals to apply a potential across the same, and a connection to the aluminum foil to maintain the same at a higher potential than that prevailing in the film at its portion opposite the aluminum strip.

9. An amplifier for oscillating current, comprising a glass block fractured transversely, a strip of aluminum foil retained in the fracture of said block with an edge substantially flush with the corresponding surface of the block, copper terminal coatings carried by the glass block upon opposite sides of said foil and out of contact therewith, a film of copper sulphur compound extending over the surface of said copper terminals and the aluminum edge, output connections to the said copper terminals to apply a potential across the same, a connection to the aluminum foil to maintain the same at a higher potential than that prevailing in the film at its portion opposite the aluminum strip, and a source of fluctuating current in circuit with the aluminum foil.

In testimony whereof I affix my signature.

JULIUS EDGAR LILIENFELD.